



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/759,419

01/20/2004

Takahiko Iriyama

VX012307

7769

21369 7590 03/08/2007
POSZ LAW GROUP, PLC
12040 SOUTH LAKES DR.
SUITE 101
RESTON, VA 20191

EXAMINER

SHEEHAN, JOHN P

ART UNIT

PAPER NUMBER

1742

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
--	-----------	---------------

3 MONTHS

03/08/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/759,419

Applicant(s)

IRIYAMA ET AL.

Examiner

John P. Sheehan

Art Unit

1742

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 December 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,7,14 and 19-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,7,14 and 19-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on December 14, 2006 has been entered.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 7, 14 and 19 to 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukuno et al. (Fukuno, US Patent No. 5,916,376).

Fukuno teaches a specific example of a Sm-Fe-N alloy having the TbCu₇ structure (column 11, line 41), a composition that with the exception of the Sm content is encompassed by applicants' claims, a grain diameter of 200 nm (0.2 microns) and a thickness of 19 microns that are also encompassed by the instant claims. (columns 11

and 22, Table 1, Example 105). Fukuno teaches that this alloy composition is pulverized and therefore is in powder form (column 11, lines 58 to 59). It is the Examiner's position that in applicants' the phrase, "up to" used to describe the lower limit for the amount of rare earth that can be substituted for Sm and the lower limit for Co that can be substituted for Fe in claim 1 reads on zero. Applicants' claims therefore do not require the presence of additional rare earths or the presence of Co. Thus, Fukuno's Example 105 closely approximates the applicants' claimed alloy composition. Fukuno also teaches that the disclosed magnetic powder is used to make bonded magnets as recited in applicants' claim 14 (for example, see column 1, line 6 to 8 and column 10, lines 36+).

The claims and Fukuno differ in that regarding Fukuno's Example 105, the only difference between the instantly claimed alloy and Fukuno's Example 105 is that Fukuno's Example 105 contains 7 at.% Sm while the instant claims recite a minimum Sm content of greater than 7.1, 7.2, 7.3 and 7.5 at.%.

However, one of ordinary skill in the art at the time the invention was made would have considered the invention to have been obvious because the 7 at. % Sm content of Fukuno's Example 105 and the instantly claimed minimum Sm content of greater than 7.1, 7.2, 7.3 and 7.5 at.% recited in applicants' claims 1 and 19 to 21 respectively, are very similar and closely approximate each other, therefore one of ordinary skill in the art would have expected Fukuno's Example 105 and the instantly claimed to have the same properties. See *in re Peterson*, 65 USPQ2d 1379, 1382, citing *Titanium Metals Corp. v. Banner*, 227 USPQ 773, 779 and MPEP 2144.05.

Art Unit: 1742

“a *prima facie* case of obviousness exists where the claimed ranges and prior art ranges do not overlap but are close enough that one skilled in the art would have expected them to have the same properties. *Titanium Metals Corp. of America v. Banner*, 778 F.2d 775, 227 USPQ 773 (Fed.Cir.1985)(Court held as proper a rejection of a claim directed to an alloy of “having 0.8%nickel,0.3%molybdenum,up to 0.1%iron,balance titanium ” as obvious over a reference disclosing alloys of 0.75%nickel,0.25%molybdenum,balance titanium and 0.94%nickel,0.31%molybdenum,balance titanium.).

Claim Rejections - 35 USC § 102/103

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 7, 14 and 19 to 21 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Pinkerton et al.

(Pinkerton, US Patent No. 5,395,459, cited in the IDS submitted January 20, 2004)

Pinkerton teaches a Sm-Fe-N powdered magnetic material having the TbCu₇ crystal structure (column 6, lines 40 to 45), a thickness of less than 200 microns, desirably 20 to 120 microns and preferably 30 to 40 microns (column 1, lines 59 to 62)

Art Unit: 1742

which encompasses the powder thickness recited in applicants' claim 1. Pinkerton teaches the use of the disclosed powder in bond magnets (column 1, lines 35 to 40) as recited in applicants' claim 14. Pinkerton teaches that the crystal size of the alloy is desirably 20 nm to 500 nm ($0.5\mu\text{m}$) which is encompassed by the crystal grain size of 10 nm to $0.5\mu\text{m}$ recited in applicants' claim 7. Pinkerton's Sm-Fe-N alloy is manufactured by quenching a melt of an Sm-Fe alloy to form a ribbon, comminuting the alloy ribbon and nitriding the resulting alloy powder (column 1, line 45 to column 2, line 10). Pinkerton also teaches a specific example of an alloy composition and process that is encompassed by applicants' disclosed method of making the instantly claimed alloy (compare Pinkerton's Example 1 and applicants' disclosure, page 6, lines 17 to 28).

The claims and Pinkerton differ in that Pinkerton is silent as to the nitrogen content of the final Sm-Fe-N powder.

However, one of ordinary skill in the art at the time the invention was made would have considered the invention to have been obvious because the composition and the process of Pinkerton's Example 1 are similar to, if not, encompassed by applicants' alloy composition and process; and Pinkerton's alloy has the same TbCu_7 crystal structure and crystal grain size as recited in the instant claims. In view of this, the Pinkerton's alloy would be expected to possess all the same properties, including nitrogen content, as recited in the instant claims, In re Best, 195 USPQ, 430 and MPEP 2112.01.

"Where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a prima facie case of either anticipation or obviousness has been established, In re Best, 195 USPQ

Art Unit: 1742

430, 433 (CCPA 1977). 'When the PTO shows a sound basis for believing that the products of the applicant and the prior art are the same, the applicant has the burden of showing that they are not.' In re Spada, 15 USPQ2d 655, 1658 (Fed. Cir. 1990). Therefore, the prima facie case can be rebutted by evidence showing that the prior art products do not necessarily possess the characteristics of the claimed product. In re Best, 195 USPQ 430, 433 (CCPA 1977)." see MPEP 2112.01.

Response to Arguments

4. Applicant's arguments filed December 14, 2006 have been fully considered but they are not persuasive.

5. Applicants argue that the case law, Titanium Metals v. Banner, cited by the Examiner in making the rejection in view of Fukuno, is not relevant because the underlying fact situation is different, that the claims require greater than 7.1, 7.2, 7.3 and 7.5 at. % Sm whereas Fukuno's Example 105 teaches 7 at. % Sm and that these Sm proportions are mutually exclusive and that since Fukuno's Example 105 is an example of a prior art alloy one of ordinary skill in the art would not be motivated to modify Fukuno's Example 105. The Examiner is not persuaded. Although the fact situation here and in Titanium v. Banner is not exactly the same, it is the Examiner's position that fact situations in case law and application under consideration are rarely, if ever, exactly the same. Further, one of the underlining principles in Titanium v. Banner, that alloy compositions that closely approximate each other would be expected to possess the same properties is applicable in the instant case. Applicants have not controverted this position by the Examiner.

Art Unit: 1742

Applicants further argue that one of ordinary skill in the art would not be motivated to modify the 7.0 % Sm content in Fukuno's Example 105 to the 7.1 at%, 7.2 at%, 7.3 at% or 7.5 at% recited in applicants' claims 1 and 19 to 21 respectively. The Examiner is not persuaded. The Examiner's reasoning in the rejection in view of Fukuno is not based on the principle that one of ordinary skill in the art would have been motivated to modify Fukuno's Example 105. Instead, the rejection is based on the principle set forth in Titanium V. Banner, that because the 7 at. % Sm content of Fukuno's Example 105 and the instantly claimed minimum Sm content of greater than 7.1, 7.2, 7.3 and 7.5 at.% recited in applicants' claims 1 and 19 to 21 respectively, are very similar and closely approximate each other, therefore one of ordinary skill in the art would have expected Fukuno's Example 105 and the instantly claimed to have the same properties. See *in re Peterson*, 65 USPQ2d 1379, 1382, citing *Titanium Metals Corp. v. Banner*, 227 USPQ 773, 779 and MPEP 2144.05.

"a *prima facie* case of obviousness exists where the claimed ranges and prior art ranges do not overlap but are close enough that one skilled in the art would have expected them to have the same properties. *Titanium Metals Corp. of America v. Banner*, 778 F.2d 775, 227 USPQ 773 (Fed.Cir.1985)(Court held as proper a rejection of a claim directed to an alloy of "having 0.8%nickel,0.3%molybdenum,up to 0.1%iron,balance titanium " as obvious over a reference disclosing alloys of 0.75%nickel,0.25%molybdenum,balance titanium and 0.94%nickel,0.31%molybdenum,balance titanium.).

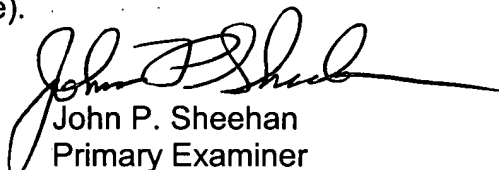
Art Unit: 1742

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John P. Sheehan whose telephone number is (571) 272-1249. The examiner can normally be reached on T-F (6:45-4:30) Second Monday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


John P. Sheehan
Primary Examiner
Art Unit 1742

jps